Logistics Management Institute

Creating an Organizational Infrastructure to Manage EDI for the Military Traffic Management Command

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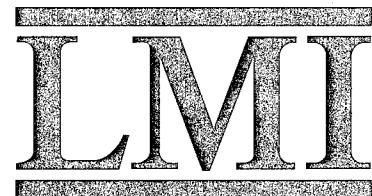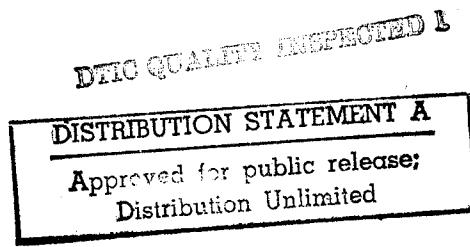
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Executive Summary

Since 1988, DoD has been stressing the use of electronic data interchange (EDI) techniques as an alternative to paper. The primary motivation for replacing routine business documents with electronic exchanges of information is that DoD could realize cost savings totaling $1.2 billion over 10 years.[1]

In concert with DoD's goal, the Military Traffic Management Command (MTMC) has made several significant investments in EDI applications. However, its implementation efforts are decentralized, which results in inefficient use of scarce resources and duplication of effort among various EDI applications.

To make better use of EDI, we believe that MTMC needs a "corporate direction." We recommend that MTMC establish an EDI Coordination Office, reporting to the Deputy Chief of Staff for Information Management, and form a permanent EDI Coordination Committee consisting of representatives of all MTMC components with EDI interests. Many private-sector companies that are successfully using EDI have adopted similar approaches.

By the end of FY96, MTMC will have developed seven EDI applications involving more than 900 EDI trading partners and 15 public standards. The benefits from those applications will not accrue automatically. MTMC will need to make a concerted effort to ensure that trading partner agreements are in place, carriers are qualified to exchange specific EDI transaction sets, and users are trained to support various applications. Those and other activities critical to a successful EDI program require the dedication of full-time EDI professionals. We estimate that MTMC will require 12 full-time-equivalent (FTE) personnel dedicated to EDI. We further estimate that MTMC already has the equivalent of 7 FTE personnel devoted to various EDI applications, which leaves a shortfall of 5 FTE personnel.

We recommend that MTMC develop a program implementation plan that identifies a strategy for staffing the EDI Coordination Office and obtaining other EDI resources and that establishes a charter for the EDI Coordination Committee. Finally, we recommend that MTMC develop an EDI strategic plan that identifies current and future EDI opportunities and establishes a schedule for achieving them.

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[1]LMI Report DL001-06R1, *A Business Case for Electronic Commerce*, Thomas P. Hardcastle and Thomas W. Heard, September 1990.

These actions — establishing an EDI Coordination Office, forming an EDI Coordination Committee, dedicating 12 staff members to EDI activities, preparing an EDI implementation plan, and formulating an EDI strategy — should position MTMC to realize most of the benefits associated with a comprehensive EDI program.

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BACKGROUND

DoD's EDI Direction

In May 1988, the Deputy Secretary of Defense issued a memorandum that called for all DoD Components to make extensive use of electronic data interchange (EDI) techniques. Six years later, by the end of 1994, DoD expects to publish a new directive that prescribes maximum use of EDI, employment of commercial standards, and a DoD-wide perspective on all EDI implementation efforts.

The DoD's emphasis on EDI is easily understood. As a major component of electronic commerce, EDI provides benefits unmatched by facsimile and electronic mail. It has an application-to-application orientation, unsurpassed accuracy from tightly controlled standards editing, and broad-based public acceptance. In a recent survey, 44 percent of private-sector companies with 100 or more EDI trading partners reported estimated savings of $5.00 or more for every document replaced by EDI. Approximately 60 percent of all companies using EDI reported that they save at least $1.00 or more per document.[1] Details of that survey are presented in Appendix A.

MTMC's EDI Initiatives

In concert with DoD's interest in EDI, the Military Traffic Management Command (MTMC) has invested significant resources in establishing a broad range of EDI capabilities. In the area of freight, MTMC has enhanced its CONUS Freight Management (CFM) system automation efforts to enable the electronic exchange of transportation information among DoD shippers, carriers, and Defense Finance and Accounting Service — Indianapolis Center (DFAS-IN). It further plans to upgrade the Transportation Coordinator Automated Command and Control Information System (TC ACCIS) to accommodate EDI transactions. Similar efforts in personal property have resulted in enhancements to the Worldwide Household Goods Information System for Transportation (WHIST). These systems will improve DoD's prepayment audit, transportation bill payment, and shipment tracking processes.

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[1] EDI survey results from EDI Group, Ltd., 221 Lake Street, Oak Park, Ill. 60302.

Other MTMC initiatives have focused on streamlining the transportation procurement process. The Standard Tender Electronic Processing (STEP) system permits carriers to submit voluntary and guaranteed traffic tenders electronically to MTMC. It also enables MTMC to automatically evaluate rate bids and publish tender awards. MTMC is planning a similar capability for its personal property rate filing process.

For ocean transportation, the Automated Carrier Interface (ACI) system uses EDI to book space on container ships and process carrier replies. Additional applications of EDI to enhance other areas of ocean transportation are in the planning stage.

By the end of FY96, MTMC expects to be exchanging shipment and payment information with more than 900 EDI industry trading partners. Its EDI initiatives will be using more than 15 public standards issued by the American National Standards Institute's Accredited Standards Committee (ASC) X12. Finally, MTMC's EDI applications will require interfaces with at least 10 major Military Service/Defense agency EDI systems supporting over 70 DoD activities. Appendix B provides other estimates of the scope of MTMC's EDI program

LMI's Task

To take maximum advantage of future EDI opportunities, including those available from process re-engineering, MTMC needs to modify its organization. Consequently, MTMC tasked LMI to evaluate alternative ways of managing its EDI mission. It also created a process action team consisting of representatives from the Operations (MTOP), Information Management (MTIM), and Judge Advocate (MTJA) offices to advise LMI. This report presents LMI's recommendations on managing MTMC's EDI mission.

EDI ORGANIZATION

Alternative Organizational Approaches

Most companies have selected one of three organizational approaches to manage their EDI programs:

♦ Decentralize by function.

♦ Centralize under MTOP.

♦ Centralize under MTIM.

Presently, MTMC uses a functional approach to manage its EDI efforts. All EDI initiatives are independently developed. MTOP has developed some while project management offices reporting to MTIM have developed others. While

this approach has satisfactorily served MTMC's needs to date, it does not use resources efficiently, minimize duplication of effort, and encourage maximum use of EDI throughout the Command. It also discourages sharing of ideas among projects and leads to EDI efforts only in functional areas managed by people willing to implement new ideas.

Centralizing EDI management under either MTOP or MTIM would realize benefits that are missing from a decentralized functional approach. It would provide synergism through standardization. Most private-sector companies with large EDI programs have assigned management responsibility to their information management departments because EDI implementation requires highly technical skills such as communications, hardware, and software expertise that are commonly assigned to those departments. Industry statistics show that 85 percent of private-sector companies with more than 100 EDI trading partners use a centralized management approach with 63 percent of those companies placing their EDI programs under information management departments.

Placing EDI coordination under MTIM "fits" MTMC's current organizational philosophy. Information management at MTMC is divided into systems development and implementation specialty offices each serving operations. Such an organization would enable MTMC to plan EDI projects at the "corporate" level and to share technical EDI skills at the project level. Table 1 compares the benefits of the three alternatives.

Table 1.
Comparison of EDI Organizational Structures

Benefit	Alternative		
	Decentralize by function	Centralize under MTOP	Centralize under MTIM
Enhances efficient use of resources		X	X
Minimizes duplication of effort		X	X
Facilitates maximum use of EDI		X	X
Includes strong functional management participation	X	X	
Includes strong technical participation			X
Complies with current organizational philosophy			X
Aligns with private-sector approach			X

Note: "X" indicates that a particular alternative has the associated benefit.

Recommendations for Organizing MTMC's EDI Mission

Successful EDI implementation requires strong coordination between MTIM, with its technical skills, and MTOP, which has the business experience

required for EDI implementation. As a consequence, placing MTMC's EDI mission under MTIM will be successful only in a structure that ensures MTOP input. To ensure such an input, we recommend that MTMC establish an EDI Coordination Office under MTIM. We further recommend that MTMC form a permanent EDI Coordination Committee, with representation from all MTMC units affected by EDI and chaired by the EDI Coordination Office. The EDI Coordination Committee would be responsible for identifying future EDI opportunities, overseeing the integration of EDI technologies, coordinating the development of EDI applications, and monitoring the Command's EDI performance. It may also establish temporary technical and functional work groups to address specific problems or opportunities. The proposed EDI organizational structure for MTMC is presented in Figure 1.
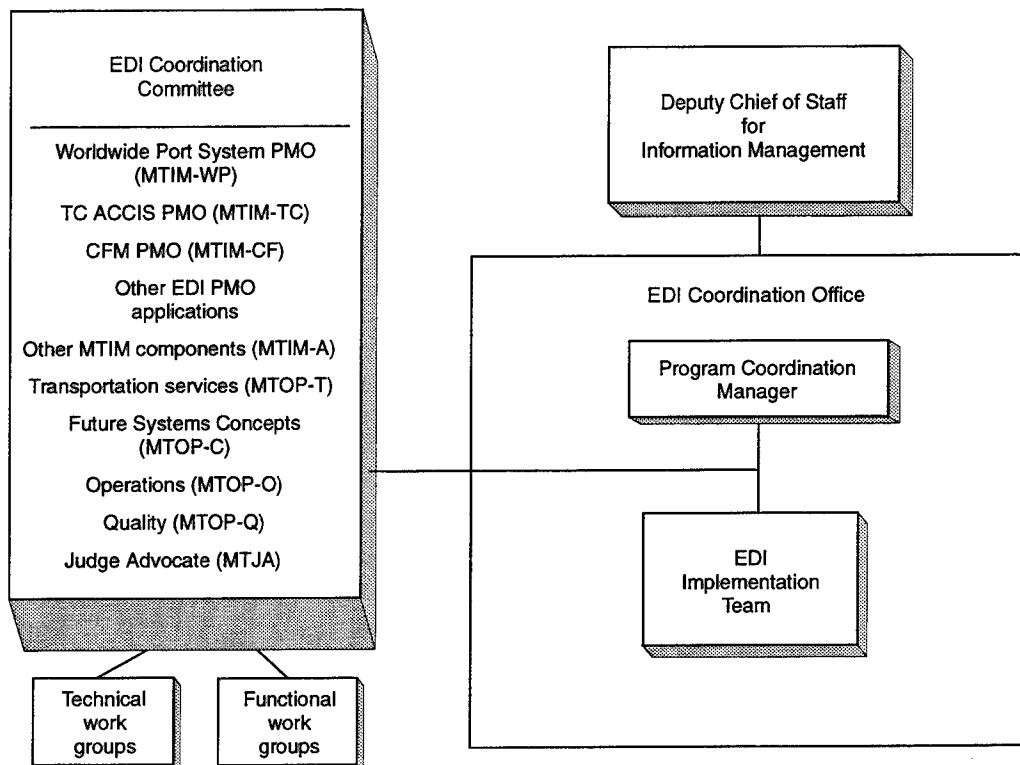
**Note:** PMO = Project Management Office.

Figure 1.
Proposed EDI Organization

EDI RESOURCE REQUIREMENTS

The resources that MTMC will require to effectively manage and carryout its EDI program depends upon the planned EDI work activities and the average annual resource hours required to accomplish each work activity. This section presents estimates of MTMC's EDI resource requirements.

Activities and Resource Hours

Implementation of any EDI program entails three types of activities: functional, technical, and management/administrative. Functional activities require personnel experienced in the operations of the organization. Those activities are project related and repeated during the development of every EDI application. Technical activities require the services of technical personnel skilled in various areas of information management. Technical activities are also repeated during the development of every EDI application. Management/administrative activities require resources to manage or administer activities that are not related to any single EDI project but are required to support the overall program effort. Figure 2 shows the responsibilities of the three types of activities in MTMC's EDI program. The functional and technical activities are arranged in the logical order that they would occur during the development of an EDI application.
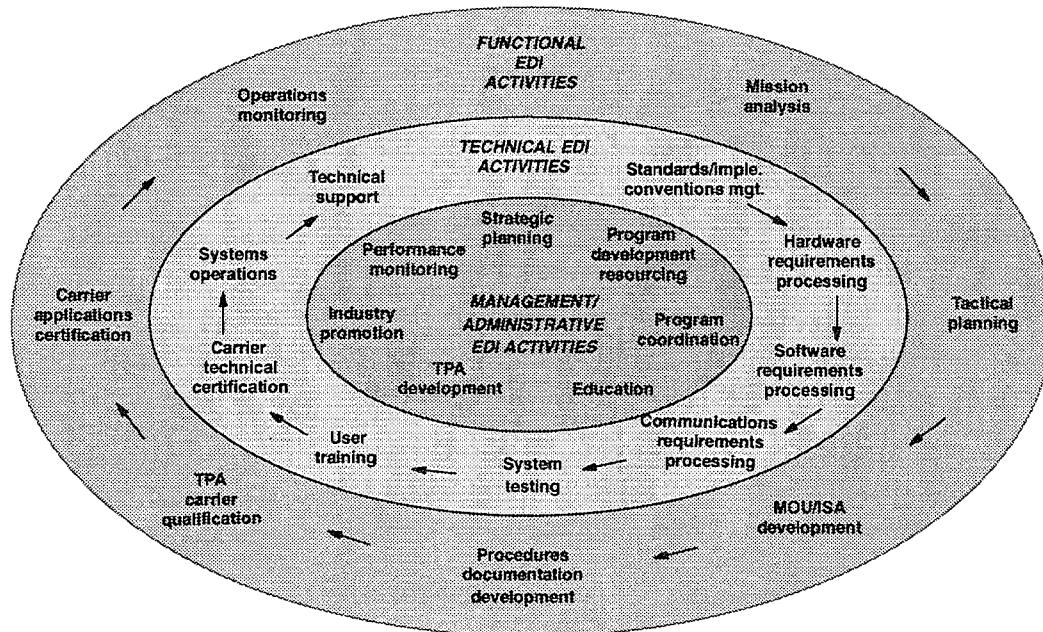
Notes: Arrows indicate the flow of work activities during implementation of an EDI project. TPA = trading partner agreement; MOU/ISA = memorandum of understanding/interagency support agreement.

Figure 2.
EDI Program Activities

Tables 2, 3, and 4 summarize the estimated annual resource hours that MTMC will require to accomplish each EDI activity, the MTMC component most qualified to lead the activity, and the other MTMC components that need to participate in the activity. The estimated annual resource hours are based on the average annual EDI program workload planned from FY94 through FY96. Appendix B describes MTMC's current and planned EDI program workload and Appendix C describes how the resource hours for each activity were developed.

Table 2.
Functional EDI Activities

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
Mission analysis	An EDI mission analysis defines and documents a mission need for functional process improvements and justifies resource expenditures for the identification and explanation of solutions to satisfy the need. It describes existing capabilities, constraints, and assumptions.	160	MTOP	EDI Coord. Office
Tactical planning	An EDI tactical plan details how MTMC plans to use EDI to satisfy a mission need. The plan includes an operating concept, which encompasses transaction sets, data requirements, and other operations detail.	600	MTOP	EDI Coord. Office
MOU/ISA development	MTMC should use MOUs or ISAs to coordinate expectations and commitments with other DoD Components or Federal agencies regarding the interface of two EDI systems. They generally describe the operating requirements and detailed data requirements.	780	PMOs	EDI Coord. Office
Procedures documentation development	Procedures documentation describes instructions for submitting electronic documents. It is used primarily to provide operating and data requirements to external (non-DoD) trading partners where an MOU/ISA is inappropriate.	240	PMOs	EDI Coord. Office

Note: EDI Coord. Office = EDI Coordination Office; MTOP-Q = MTMC Operations — Quality; USTRANSCOM = U.S. Transportation Command.

[a] An estimated 80 percent of resource hours associated with EDI functional activities are the responsibility of the lead organization, while the remaining 20 percent, which are technical in nature, are the responsibility of the EDI Coordination Office.

Table 2.
Functional EDI Activities (Continued)

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
TPA carrier qualification	Administrative resources are required to ensure that valid TPAs are in force and that a viable data base of trading partner profiles is maintained and shared with other DoD Components. USTRANSCOM has suggested that MTMC should prepare to administer TPAs for DFAS-IN and the Air Mobility Command and should coordinate the activity with the Military Sealift Command. Qualification ensures that the TPA is accurate and that the carrier is in good standing with DoD, has valid tenders on file, and has passed specific EDI capability tests. TPAs are legally binding upon all parties to ensure that the electronic equivalent of any document is deemed an acceptable practice in the ordinary course of business and that such electronic documents are acceptable as customary paper documents. TPAs need to be updated for new applications and for new trading partners.	3,886	MTOP-Q	EDI Coord. Office

Note: EDI Coord. Office = EDI Coordination Office; MTOP-Q = MTMC Operations — Quality; USTRANSCOM = U.S. Transportation Command.

[a] An estimated 80 percent of resource hours associated with EDI functional activities are the responsibility of the lead organization, while the remaining 20 percent, which are technical in nature, are the responsibility of the EDI Coordination Office.

Table 2.
Functional EDI Activities (Continued)

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
Carrier applications certification	Carriers that have valid TPAs on file and have been technically certified in EDI must also be functionally certified in every application. Application certification requires proficiency in the data content specified in the EDI implementation conventions or other procedures documentation.	4,352	MTOP	EDI Coord. Office
Operations monitoring	EDI operations monitoring includes data control, assurance that transmissions are completed and acknowledged, security, quality evaluation, and follow-up.	450	MTOP	EDI Coord. Office

Note: EDI Coord. Office = EDI Coordination Office; MTOP-Q = MTMC Operations — Quality; USTRANSCOM = U.S. Transportation Command.

[a] An estimated 80 percent of resource hours associated with EDI functional activities are the responsibility of the lead organization, while the remaining 20 percent, which are technical in nature, are the responsibility of the EDI Coordination Office.

Table 3.
Technical EDI Activities

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
Standards/ implementation conventions management	EDI standards define the format and content of information trans-actions. Implementation conven-tions define how standards are used for specific applications. Continuous maintenance of stan-dards and conventions are required to ensure that new requirements are accommodated as the EDI community matures. This activity includes participating in the EDI data maintenance work group coordinated by USTRANSCOM and the Defense Logistics Standards Management Office.[b]	812	EDI Coord. Office	PMOs
Hardware requirements processing	This activity requires analysis of existing computer equipment capacity and throughput require-ments.	48	EDI Coord. Office	MTIM
Software requirements processing	This activity requires analysis of existing EDI translation software capabilities and possibly procure-ment action. It includes resources required to program or "map" implementation convention data requirements to the EDI translation software. The most time-consuming task included in this activity is coordi-nating the resolution of problems.	808	EDI Coord. Office	PMOs

Note: VAN = value-added network.

[a]An estimated 80 percent of resource requirements associated with EDI technical activities require exper-tise provided by the lead organization, while the remaining 20 percent requires coordination outside the responsible lead organization.

[b]LMI Report DF301LN1, *Managing EDI Standards and Implementation Conventions in Defense Transporta-tion*, W. Michael Bridges, June 1994.

Table 3.
Technical EDI Activities (Continued)

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
Communications requirements processing	Communications resources are used to analyze existing communications capabilities and to install EDI application communications to accommodate volume, timeliness, reliability, recovery, and security requirements. Other functions of this activity include coordinating VAN procurement requirements with the Defense transportation community. As in the preceding activity, the most time-consuming task included in this activity is coordinating the resolution of problems.	633	EDI Coord. Office	MTIM
System testing	EDI system testing includes the testing of MTMC EDI applications and interfaces with other DoD systems. Specifically, it includes the testing of various features such as EDI software, data communications with a VAN or directly with trading partners, transmission of required acknowledgments, report content, timeliness, audit trails, security, archiving, and recovery.	1,920	EDI Coord. Office	PMOs
User training	This activity requires preparing EDI system user training material and conducting user training sessions.	272	EDI Coord. Office	PMOs
Carrier technical certification	Before a carrier is certified as a MTMC trading partner in any application, the carrier must be certified technically for EDI capability. Technical certification includes testing the communications, general EDI transmissions for syntax compliance, and EDI functional acknowledgment capability.	4,352	EDI Coord. Office	MTOP-Q

Note: VAN = value-added network.

[a] An estimated 80 percent of resource requirements associated with EDI technical activities require expertise provided by the lead organization, while the remaining 20 percent requires coordination outside the responsible lead organization.

Table 3.
Technical EDI Activities (Continued)

Activity	Description	Est. annual resource hours[a]	Lead org.	Coord. org.
Systems operations	Although EDI is generally thought of as a completely automatic process, it requires a support staff to perform trading partner profile maintenance, system surveillance, backup, archiving, and recovery.	2,700	MTIM	EDI Coord. Office
Technical support	Technical support activities include system recovery and troubleshooting. It also includes a hot-line service for users.	1,067	EDI Coord. Office	MTIM

Note: VAN = value-added network.

[a] An estimated 80 percent of resource requirements associated with EDI technical activities require expertise provided by the lead organization, while the remaining 20 percent requires coordination outside the responsible lead organization.

Table 4.
Management/Administrative EDI Activities

Activity	Description	Est. annual resource hours	Lead org.	Coord. org.
Strategic planning	This activity requires the development of an EDI strategic plan and annual evaluations and revisions. That plan should identify MTMC's future EDI projects and present an implementation schedule.	160	EDI Coord. Office	EDI Coord. Committee
Program development resourcing	This activity involves identifying sources of EDI funding throughout DoD and then pursuing that funding.	40	EDI Coord. Office	EDI Coord. Committee
Program coordination	This activity includes attending community work groups sponsored by the Defense Transportation Program Coordinator (formally unassigned but likely to be USTRANSCOM); coordinating translation software and communications issues and EDI regulation requirements within MTMC; and coordinating other activities included in MTMC's EDI program.	1,500	EDI Coord. Office	EDI Coord. Committee
Education	This activity involves developing and conducting EDI training courses throughout MTMC.	100	EDI Coord. Office	PMO/ MTOP
TPA development	This activity requires resources to develop a TPA that can be used for all MTMC applications. USTRANSCOM could ask MTMC to develop a TPA that can be used throughout the Defense transportation community.	160	EDI Coord. Office	MTJA/ PMO/ MTOP

Table 4.
Management/Administrative EDI Activities (Continued)

Activity	Description	Est. annual resource hours	Lead org.	Coord. org.
Industry promotion	This activity includes the development of workshops, symposiums, or conferences aimed at promoting/educating the carrier industries regarding MTMC's EDI applications.	240	EDI Coord. Office	PMO/OPS
Performance monitoring	This activity involves measuring EDI system performance for each application relative to volume processed by period, number of trading partners, and other goals. The EDI strategic plan also needs to be monitored with respect to satisfying its goals and objectives.	250	EDI Coord. Office	EDI Coord. Committee

Staff Requirements

We estimate that MTMC will require approximately 12 full-time-equivalent (FTE) personnel to carryout its EDI program. That level of staffing should accommodate MTMC's average EDI program workload since 3 years of current and planned EDI initiatives were considered and averaged to minimize the impact of peak requirements.

In keeping with the organizational recommendations presented earlier, the EDI Coordination Office will require six FTE personnel to perform the technical and program management activities identified in Tables 2, 3, and 4. Those six FTE personnel should include an EDI coordination manager, two system engineers, and three EDI technicians. The system engineers would coordinate with PMOs and MTOP offices performing functional activities while the EDI technicians would support the technical activities.

The MTIM, other than the EDI Coordination Office and PMOs, will require another FTE resource to operate the EDI application systems and to coordinate communications and hardware requirements and technical support. The PMOs will need one FTE resource to develop MOUs and procedures documentation and to coordinate user training and EDI application interface system testing with the EDI Coordination Office.

The MTOP, primarily Future Systems Concepts and Transportation Services, will require two FTE personnel to perform mission analysis and tactical planning for new tasks, monitor EDI operations, and certify carriers for specific EDI applications. Finally, MTOP-Q will require two FTE personnel to administer the TPAs.

Currently, MTMC has 18 staff members (including contractor support) working, mostly part time, on EDI applications. We estimate that those part-time personnel equate to seven FTE employees. One staff member is dedicated full time to EDI from MTIM's Integration Office; the others are all part time and spread among the PMOs and MTOP offices, including CFM, WHIST, TC ACCIS, and ACI. If we can assume that the staff members currently performing EDI activities within MTMC could be reassigned within the new recommended EDI organizational structure, MTMC will still need three additional FTE EDI specialists and two TPA administrators. Table 5 summarizes the resource hours shown in Tables 2, 3, and 4 by MTMC component and presents the estimated FTE personnel needed to satisfy those hours.

Table 5.
EDI Staff Requirements

MTMC component	Estimated annual resource hours	Estimated staff requirement[a]
EDI Coordination Office	13,013	6
MTIM	2,510	1
PMOs	1,578	1
MTOP	4,450	2
MTOP-Q	3,979	2
Total	25,480	12

[a] One FTE staff requirement is assumed to equal 2,000 resource hours.

NEXT STEPS

To ensure that its EDI program meets the needs of the entire Command effectively and efficiently, MTMC needs to establish an EDI Coordination Office under the MTIM umbrella and then create an EDI Coordination Committee. It also needs to prepare an EDI program implementation plan and an EDI strategic plan that calls out the goals and objectives of the EDI program.

The implementation plan should present a strategy for staffing the EDI Coordination Office and obtaining the additional EDI resources. It should detail the roles and responsibilities of each MTMC component in the EDI program and provide the charter for the EDI Coordination Committee.

The EDI strategic plan should identify current and future EDI opportunities within MTMC, taking into consideration various external influences such as the migration towards a corporate information management transportation system. The plan also should identify short-term and long-term EDI objectives and outline a schedule for accomplishing them.

APPENDIX A

Industry Experiences with EDI

This appendix presents the results of a survey of industry practices on the use of electronic data interchange (EDI) techniques. Several research firms track the private sector's use of EDI on a continuing basis. The results in this appendix have been extracted from statistical reports prepared by EDI Research.[1]

Many of the statistics summarized in Charts 1 through 13 are referenced throughout the main text of this report. Some of the charts are included because the Military Traffic Management Command (MTMC) can use the results in developing its strategic plan for EDI. Others are included because most of MTMC's EDI exchanges will be with commercial companies, and knowing their attitudes will help MTMC to implement a more effective EDI program in a timely manner.

Each chart includes a survey question, the percentage of respondents giving particular answers, the number of respondents, and the point for including the chart. In these charts, "hub respondents" are defined as companies with more than either 100 current and planned 1993 trading partners or $3,000 per month in EDI value-added network (VAN) expenditures. "EDI-active respondents" are companies that are presently doing EDI, regardless of the number of their EDI trading partners or the magnitude of their monthly VAN expenditures.

Chart 1. Question: Does your company have a dedicated corporate EDI coordinator or a corporate EDI project team?

Point: Eighty-five percent of the hub companies surveyed have a dedicated corporate EDI director.

Answer	Hub respondents		
	1991	1992 (%)	1993 (%)
Yes	NA	73.7	84.6
No	NA	25.4	14.7
No Answer	NA	0.8	0.7
Number of respondents	–	118	143

Note: NA = not available.

Chart 2. Question: In what area is the coordinator located?			
Point: Most hub companies (nearly 63 percent) have located their EDI coordinator in the data processing department. Another growing trend is the concept of an EDI team with members from different departments (10.7 percent).			

	Hub respondents		
Answer	1991 (%)	1992 (%)	1993 (%)
Corporate services	5.9	5.8	5.8
Customer service	0.7	–	1.7
Data processing	63.0	47.1	62.8
Finance	5.2	5.8	2.5
Manufacturing	–	2.3	0.8
Operations	2.2	1.1	4.1
Purchasing	4.5	5.7	5.8
Sales/marketing	9.6	9.2	5.8
Team, different departments	4.5	8.0	10.7
Transportation/traffic/distribution	2.2	2.3	–
Other	2.2	12.7	–
Number of respondents	175	87	121

Chart 3. Question: With what percentage of your EDI trading partners do you have a trading partner agreement?			
Point: Although more than 17 percent of the respondents indicated that they do not use trading partner agreements, the largest block (46.2 percent) indicated that they use trading partner agreements with over 90 percent of their trading partners.			

	EDI-active respondents		
Answer	1991	1992	1993 (%)
0%	NA	NA	17.3
1 – 20	NA	NA	15.9
21 – 50	NA	NA	9.1
51 – 75	NA	NA	3.4
76 – 90	NA	NA	2.3
91 – 100	NA	NA	46.2
Other	NA	NA	5.8
Number of respondents	NA	NA	753

Chart 4. Question: What was your most important reason for initially doing EDI?

Point: Most companies initiate EDI at the request of their trading partners, but then realize the associated benefits later.

Answer	EDI-active respondents[a]		
	1991 (%)	1992 (%)	1993 (%)
Customer or supplier request	85.0	54.6	61.9
Cost savings	3.5	6.5	10.2
Quick access to information	2.6	5.2	7.0
Accuracy of data and reduction in errors	2.7	8.2	6.8
Competitive advantage to be gained	5.4	12.2	8.0
Improve customer service	NA	11.8	7.0
Other	0.8	1.0	NA
Number of respondents	625	705	744

[a] More than one response allowed.

Chart 5. Question: What is the most important barrier to doing or increasing the use of EDI with your trading partners?

Point: In contrast to Chart 4, the primary barrier to EDI is the absence of participation by trading partners.

Answer	EDI-active respondents		
	1991[a] (%)	1992 (%)	1993 (%)
Cost of implementation	10.2	12.1	10.2
Trading partner will not participate	13.0	16.1	24.8
Lack of EDI education/training	8.8	12.1	8.3
Lack of knowledge about EDI	11.8	16.1	16.5
Incompatibility of hardware/software	14.2	8.6	9.7
Too small, no staff/technical capability	5.7	6.9	11.7
Time of implementation	6.0	4.0	8.0
Communications	4.8	2.9	6.3
Management	3.9	2.3	NA
Standards	10.9	3.5	NA
Difficulty of use	0.6	1.1	NA
Trading partner requirements	1.5	1.1	NA
Other	16.9	13.2	4.5
Number of respondents	316	174	412

[a] More than one response allowed.

Chart 6. Question: Do you use a third-party VAN to support your EDI program?

Point: Nearly all hubs use VANs. The question does not address whether direct dial or leased lines are used.

Answer	Hub respondents		
	1991 (%)	1992 (%)	1993 (%)
Yes	93.0	93.8	96.1
No	7.0	5.3	2.9
Other	–	0.9	1.0
Number of respondents	175	113	102

Chart 7. Question: How many EDI locations do you support?

Point: The number of companies using EDI is growing at such a rate that MTMC may not need to direct many of its trading partners to replace their paper-based processes with electronic exchanges of business information.

Answer	EDI-active respondents		
	1991	1992	1993
Total U.S. EDI locations (estimates based on survey statistics)	12,000	14,000	33,000
Change from previous year	–	+17%	+136%

Chart 8. Question: How many firms are you doing EDI with in your functional area?

Point: MTMC's program, with over 900 trading partners, ranks in the top 10 percent of hub respondents.

Answer	1993	
	All respondents (%)	Hubs (%)
1 – 500	97.6	90.9
501 – 1,000	0.8	2.8
Over 1,000	1.3	6.3
Other	0.3	–
Mean number of trading partners	48.1	176.9
Median	8.0	75.0
Standard deviation	164.0	313.5
Number of respondents	753	143

Chart 9. Question: How many full-time-equivalent personnel are supporting your EDI implementation?

Point: If we can assume that the top 10 percent of hub respondents having the most trading partners (Chart 8) are also the respondents reporting the most full-time-equivalent EDI personnel, MTMC would fall into the category reporting over 11.

Answer	1993	
	All respondents (%)	Hubs (%)
0	13.4	7.9
1	35.9	21.1
2	21.6	9.2
3	10.0	14.5
4	3.9	11.8
5	4.1	10.5
6 – 8	2.4	5.3
9 – 11	1.0	5.3
Over 11	1.7	6.5
Other	6.0	7.9
Mean	2.2	4.4
Median	1.0	3.0
Standard deviation	2.9	5.0
Number of respondents	412	76

Chart 10. Question: What are your projected savings per document from converting to EDI?

Point: From a 1993 sample group of 76 companies, 35 provided an estimate; the other 40 responded with either "don't know" or did not provide an estimate. Forty-four percent of the hubs responding estimated that they are saving more than $5.00 per document.

Answer	Hub respondents		
	1991 (%)	1992 (%)	1993 (%)
$1.00 or less	19.5	NA	41.7
$1.01 – $5.00	29.3	NA	13.9
More than $5.00	51.2	NA	44.4
Number of respondents	NA	NA	35

Chart 11. Question: How important are potential benefits of EDI and the overall corporate EDI strategy to your functional area?

Point: More than 75 percent of hub respondents rate the importance of a corporate EDI strategy as either very or extremely important to their functional areas.

Answer	Hub respondents		
	1991 (%)	1992 (%)	1993 (%)
Not important	NA	NA	1.2
Somewhat important	NA	NA	4.0
Moderately important	NA	NA	17.3
Very important	NA	NA	33.3
Extremely important	NA	NA	44.0
Number of respondents	NA	NA	102

Chart 12. Question: How important is EDI to the implementation of total quality management?

Point: More than 66 percent of the hubs rate EDI's role in total quality management as very important.

Answer	Hub respondents		
	1991 (%)	1992 (%)	1993 (%)
Not important	NA	3.8	5.3
Somewhat important	NA	–	8.0
Moderately important	NA	20.8	20.0
Very important	NA	75.4	66.7
Number of respondents	NA	53	75

Chart 13. Question: For your functional area, what was your approximate error rate (errors as a percentage of total) for the most representative business process before and after the introduction of EDI?

Point: Hub respondents estimate that EDI helped to reduce the average error rate from 12.3 percent before EDI to 4.1 percent after introducing EDI into their business processes. The corresponding standard deviations dropped from 12.1 percent to 4.6 percent, which indicates a substantial reduction in the variability of the reported percentages.

	1993			
	All respondents (%)		Hubs (%)	
Category	Before	After	Before	After
Mean	9.5	4.0	12.3	4.1
Median	5.0	2.0	11.0	2.0
Standard deviation	10.3	5.7	12.1	4.6
Number of respondents	412		76	

APPENDIX B

MTMC's EDI Program Requirements

INTRODUCTION

Before the Military Traffic Management Command (MTMC) can lay out a comprehensive electronic data interchange (EDI) program, it must determine the resources that it will need to support the program. Those resources will depend upon a number of factors, including the following:

◆ Number of current and planned EDI applications

◆ Number of EDI transaction sets

◆ Number of industry trading partners

◆ Number of trading partner agreements or addendums requiring administration

◆ Number of MTMC carriers requiring EDI certification

◆ Number of Military Service/Defense agency systems requiring an EDI interface with MTMC systems

◆ Number of Military Service/Defense agency sites requiring interface with MTMC systems.

Table B-1 provides estimates of MTMC's potential EDI workload. They were obtained from a MTMC process action team established to provide input to this analysis and from a work group consisting of Defense transportation representatives interested in EDI program administration.

According to the estimates in Table B-1, MTMC's EDI program could eventually be comparable to many of the largest EDI programs in the private sector. According to the survey results presented in Appendix A, only 9 percent of private-sector companies with 100 or more EDI trading partners report more than 500 trading partners. By the end of FY96, however, MTMC is expecting to have more than 900 EDI trading partners.

Table B-1.
MTMC's EDI Program Workload Expectations

Workload factor	Number expected by end of FY96
Number of current and planned EDI applications	7
Number of EDI transaction sets	15
Number of EDI industry trading partners	937
Number of EDI trading partner agreements or addendums requiring administration	2,818
Number of MTMC carriers requiring EDI certification	408
Number of Military Service/Defense agency systems requiring an EDI interface with MTMC systems	10
Number of Military Service/Defense agency sites requiring interface with MTMC systems	82

EDI APPLICATIONS AND TRANSACTION SETS

MTMC's EDI program will support five business areas:

◆ Surface freight transportation

◆ Personal property transportation

◆ Ocean transportation

◆ Command and control

◆ Contracting.

An overview of the EDI applications in each business area is presented in the following subsections.

Surface Freight Transportation

The MTMC has developed and implemented the CONUS Freight Management (CFM) system to receive shipment information from shippers and provide shipment costing information to the Defense Finance and Accounting Service — Indianapolis Center (DFAS-IN) using EDI transaction sets in support of the Defense transportation payment program. A module of CFM — the Standard Tender Electronic Processing (STEP) system — receives and processes tender information from carriers. The CFM system uses the following American

National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 transaction sets:

- 213, Motor Carrier Shipment Status Inquiry

- 214, Transportation Carrier Shipment Status Message

- 602, Transportation Services Tender

- 820, Payment Order/Remittance Advice

- 858, Shipment Information

- 996, File Transfer

- 997, Functional Acknowledgment.

The MTMC is also considering use of the ASC X12 842 Transaction Set, Nonconformance Report, as a future enhancement to the processing of shipment discrepancy information.

Personal Property Transportation

Like the CFM system, the Worldwide Household Goods Information System for Transportation (WHIST) has been developed to support the Defense transportation payment program, among other applications. It will provide personal property shipment information to DFAS-IN and receive rate information from carriers. It is expected to interface with DFAS-IN in FY95. It will support the same transaction sets as the CFM system, except for the 996 Transaction Set, File Transfer.

Ocean Transportation

The MTMC has developed or is planning to develop four EDI systems to support its ocean business:

- Automated Carrier Interface (ACI) system

- Advanced Arrival Notification Interface (AANI) system

- Integrated Booking System (IBS)

- Worldwide Port System (WPS).

The ACI system supports MTMC's ocean booking function. Booking information is exchanged with ocean carriers for containerized export traffic and provided to the Military Sealift Command (MSC). With continuous operation since

1985 and with a current volume of 500 to 600 EDI transaction sets per day, ACI is one of the world's longest running and successful EDI projects. It also supports the following EDI transaction sets:

♦   300, Reservation (booking request)

♦   301, Confirmation (confirmation or decline or counter proposal)

♦   303, Booking Cancellation

♦   315, Status Details (container tracking) (in test mode).

The first three transaction sets are operational while the fourth, Status Detail, is now being tested.

The AANI system is being developed by MTMC Western Area to receive advanced arrival information from ocean carriers. That information will include customs manifests flowing from ship (carrier) to shore (carrier) to U.S. Customs with a copy to MTMC. Although the initial data will be in a Customs Automated Manifest System (AMS) format, MTMC expects carriers to use the ASC X12 309 Transaction Set format, U.S. Customs Manifest. The ships will transmit their data at least 3 days before reaching port. The first phase is scheduled for production in 1994. When the system is completed, it will use the following EDI transaction sets:

♦   309, U.S. Customs Manifest

♦   312, Arrival Notice

♦   350, Release.

Following successful testing at Oakland, California, MTMC will install the system at Bayonne, New Jersey, and eventually at about 12 CONUS ports.

The IBS, now under development, will eventually replace ACI and absorb AANI. In addition to the above ACI features, IBS will also include application enhancements and provide shipment information to MSC for payment reconciliation processing. MTMC could use either the 858 or 304 (Shipping Instructions) Transaction Set to send shipment information to MSC.

The WPS is being built to replace MTMC's Terminal Management System (TERMS) and TERMS Online System (TOLS). WPS, which will include installations overseas, could eventually absorb or replace IBS and AANI. While MTMC has not yet determined the transaction sets that will be included in WPS, the ASC X12 323 Transaction Set, Vessel Schedule and Itinerary, is being considered. Trading partners will include ocean carriers, MSC, and U.S. Customs. WPS is planned for implementation at CONUS installations in 1995.

Command and Control

The MTMC's primary command and control system is the Transportation Coordinator Automated Command and Control Information System (TC ACCIS). One of the functions of TC ACCIS is the generation of the Government Bill of Lading (GBL) and the Advanced Transportation Control Movement Document (ATCMD). MTMC is planning to convert the transmission of both the GBL and ATCMD to EDI transactions. That conversion, which is expected to be completed in 1995, will include the use of ASC X12 858 Transaction Set. DoD Components will transmit 858 Transaction Sets to MTMC, which, in turn, will forward domestic freight shipment information to DFAS-IN to support its payment program.

Contracting

The Army has developed the Standard Army Automated Contracting System (SAACONS) to provide information support to contracting offices for contracts that total $25,000 or less. The EDI version of the system is installed at 40 Army installations, but is not currently scheduled for implementation at MTMC. (MTMC currently uses a non-EDI version.) SAACONS uses the following transaction sets:

- ◆ 836, Contract Award

- ◆ 838, Trading Partner Profile

- ◆ 840, Request for Quotation

- ◆ 843, Response to Request for Quotation

- ◆ 850, Purchase Order

- ◆ 856, Purchase Order Acknowledgment

- ◆ 997, Functional Acknowledgment.

Once MTMC receives the EDI version of SAACONS, it will be a user of the system, with no EDI maintenance responsibilities.

INDUSTRY TRADING PARTNERS

The MTMC expects to be exchanging EDI transactions with more than 900 industry trading partners by the end of FY96, including 300 motor and rail freight carriers, 7 ocean freight carriers, 30 air freight carriers, and 600 personal property carriers. Another 200 personal property carriers and 200 bus and rail

passenger carriers could increase the total to more than 1,300 trading partners beyond FY96, but no firm plans supporting passenger expansion exist.

TRADING PARTNER AGREEMENTS AND ADDENDUMS

Every carrier doing business electronically with Defense transportation activities is required to sign a trading partner agreement (TPA). Addendums to the TPA identify transaction sets or trading partners added to the original TPA. Personal property carriers submit a similar document referred to as an EDI agreement.

To accommodate "a single face to industry," Defense transportation needs to adopt a single version of the TPA and a consistent process for administering it. DFAS-IN has requested that MTMC administer TPAs to support invoicing and payment applications because MTMC works with many of the same carriers in other EDI applications. Table B-2 shows the number of TPAs and addendums that MTMC will need to administer by the end of FY96.

Table B-2.
Number of EDI TPAs and Addendums Requiring MTMC Administration

Transportation service mode	By end of FY96		
	Number of industry trading partners	EDI applications[a]	Number of TPAs and addendums[b]
Motor/rail freight	300	I, P, R, SI, S, DR	900
Ocean freight	7	I, P, R, SI, S, B, A, SS	28
Air freight	30	I, P, R, SI, S, DR	90
Personal property	600	I, P, R, SI, S, DR	1,800
Total	937	—	2,818

[a] I = invoicing; P = payment; R = rate (tender) submission; SI = shipment information; S = status inquiry; DR = discrepancy reporting (claims); B = bookings (reservations); A = arrival notice; SS = ship schedule.

[b] Estimated number of TPAs and addendums based on the projected number of industry trading partners for all applications divided by two; we further assume that each TPA or addendum will involve an average of two DoD trading partners or applications areas.

NUMBER OF CARRIERS REQUIRING EDI CERTIFICATION

All carriers that want to do business with MTMC using EDI must be tested for technical and functional capabilities before MTMC will permit them to submit EDI transactions. This practice will minimize the risk of external factors disrupting MTMC operations.

The technical certification tests examine the carrier's general EDI capability to determine that communications are established, the carrier's translation software passes routine syntax compliance checks, and the carrier can receive functional acknowledgments.

The functional certification tests the carrier's capability to meet data and operating requirements of specific applications. Those requirements are available to the carrier through the implementation conventions and procedures documentation.

Table B-3 presents the estimated number of MTMC carriers needing certification in the use of EDI techniques.

Table B-3.
Number of MTMC Carriers Requiring EDI Certification

Transportation service mode	Application (transaction set)	By end of FY96[a]
Motor/rail freight	Tender (602)	300
Ocean freight	Reservations (300, 301, 303)	7
	Status (315)	7
	Arrival notice (312, 350)	7
	Ship manifest (309)	7
Motor personal property	Rate filing (602)	50[b]
Air freight	Rate filing (602)	30
Total	—	408

[a] The number of carriers requiring EDI testing is based on the number of anticipated electronic trading partners.

[b] Most personal property carriers use approximately 35 automated data processing service bureaus to transmit rate information. The estimated number of 50 assumes a combination of service bureaus and carriers transmitting directly to MTMC.

EDI INTERFACES WITH MTMC SYSTEMS

The number of major Military Service and Defense agency systems requiring EDI interfaces with MTMC systems clearly have an effect on the amount of MTMC resources required to develop memorandums of understanding. Those memorandums detail the EDI operating and data requirements between organizations. Table B-4 shows the number of interfaces that MTMC's EDI program will need with DoD Components.

Table B-4.

Military Service/Defense Agency Systems Requiring EDI Interface with MTMC Systems

MTMC		DoD Component		
System	Number of translator sites (by end of FY96)	DoD Component (system)	Number of translator sites (by end of FY96)	Number of interfaces (by end of FY96)[a]
CFM	1	DLA (DWASP)	8	8
CFM	1	DLA (TRAMS)	8	8
CFM	1	DLA (DSS)	1	1
CFM	1	Army (SDS)	3	3
CFM	1	Army (TC ACCIS)[b]	45	45
CFM	1	Air Force (CMOS)	5	5
CFM	1	Air Force (SCD)	1	1
CFM/WHIST	2	DFAS-IN (DTRS)	1	2
CFM/WHIST	2	GSA (ASPA)	1	2
IBS/WPS	7	MSC (?)	1	7
Total	–	–	–	82

[a] Number of EDI interface requirements based on number of MTMC EDI translator sites multiplied by the number of DoD Component translator sites.

[b] Although TC ACCIS is a MTMC system, it is included as a DoD Component system for the purpose of including its interface requirements with the CFM system.

Note: DLA = Defense Logistics Agency; DWASP = Defense Warehousing and Shipping Procedure; TRAMS = Transportation Automated Management System; DSS = Distribution Standard System; SDS = Supply Depot System; CMOS = Cargo Management Operations System; SCD = Stock Control and Distribution; DTRS = Defense Transportation Payment System; GSA = General Services Administration; ASPA = Automated System for Post-Payment Audit.

APPENDIX C

Development of EDI Resource Requirements

This appendix presents the methodology that we used to develop the estimated annual resource hours for each electronic data interchange (EDI) work activity. Those estimates are based on the frequency of each work activity per year and the resource hours required to perform the work activity one time (defined as a work unit.) Estimates are based on LMI experience, input from the Military Traffic Management Command's (MTMC's) EDI process action team, input from an EDI Defense transportation work group on EDI administration, and industry experiences.

The estimates are presented in a series of tables. Tables C-1 through C-5 identify the resource requirements of functional EDI activities; Tables C-6 and C-7 identify the resource requirements of technical EDI activities; and Table C-8 identifies the resources required by EDI management and administrative program activities.

Table C-1.
Resource Requirements for Functional EDI Activities

Activity	Frequency per year	Resource hours per work unit	Annual research hours[a]
Mission analysis	2[b]	80	160
Tactical planning	2[b]	300	600
MOU/ISA development			
Develop MOUs/ISAs	3[c]	160	480
Maintain MOUs/ISAs	30[d]	10 (see Table C-2)	300
Procedures documentation development	2[b]	120	240
Trading partner agreement (TPA) carrier qualification	(see Table C-3)	(see Table C-3)	3,886
Carrier applications certification	136[e]	32 (see Table C-5)	4,352
Operations monitoring	9[f]	50	450

[a] Annual resource hours equals frequency per year multiplied by resource hours per work unit.

[b] Frequency of mission analysis, tactical planning, and procedures documentation assumes that MTMC will develop or re-engineer two EDI applications every year.

[c] Frequency of developing memorandums of understanding (MOUs) and interagency support agreements (ISAs) are based on the estimated annual number of 10 major systems requiring interface by the end of FY96.

[d] Frequency of maintaining MOUs/ISAs based on estimated number of change requests.

[e] Frequency of carrier applications certification is based on estimated annual number of carriers requiring certification by end of FY96 annualized.

[f] Frequency of monitoring EDI operations based on the number of MTMC EDI operations sites. By the ed of FY96, the CONUS Freight Management (CFM) system and Worldwide Household Goods Information System for Transportation (WHIST) will operate from one site each. The Integrated Booking System (IBS) will replace the Automated Carrier Interface (ACI) system and absorb the Advanced Arrival Notification Interface (AANI) system and is planned to be operating from two sites; the Worldwide Port System (WPS) will be operating from five sites. [The Transportation Coordinator Automated Command and Control Information System (TC ACCIS) will operate from 45 individual sites, but the Military Services, not MTMC, will monitor all EDI operations.]

Table C-2.
Maintain MOUs/ISAs — Resource Hours Analysis

Activity	Resource hours per work unit
Process MOU/ISA change requests	
Develop change requests	3.5
Document change requests	1.5
Draft change memorandums	4.0
Coordinate change requests	1.0
Total	10.0

Table C-3.

Resource Requirements for TPA Carrier Qualification

Activity	Frequency per year	Resource hours per work unit	Annual resource hours[a]
Maintain data base management system (DBMS)[b]			
Programming	5	40.0	200
Data	12	16.0	192
Process TPAs	939[c]	2.5 (see Table C-4)	2,348
Provide ad hoc reports	52	1.0	52
Respond to inquiries	300	0.5	150
Update TPA data base	944[c]	1.0	944
Total	—	—	3,886

[a] Estimated annual resource hours equals frequency per year multiplied by resource hours per work unit.

[b] MTMC will need to develop a DBMS to track TPA administration.

[c] Frequency of processing TPAs and updating the trading partner data base is based on the number of annual TPAs and addendums expected in Defense transportation by end of FY96.

Table C-4.

Process TPAs — Resource Hours Analysis

Activity	Resource hours per work unit
Receive TPA or addendum from carrier and validate information	1.0
Execute, copy, and file	0.5
Distribute to carrier	0.5
Receive and file certificate from DoD Component	0.5
Total	2.5

Table C-5.
Carrier EDI Applications Certification — Resource Hours Analysis

Activity	Resource hours per event
Interface with carrier via phone	3.0
Send convention/other material	0.5
Establish telecommunications	4.0
Set up trading partner profile	4.0
Evaluate historical test cases	20.0
Send certification message to carrier and MTOP-Q	0.5
Total	32.0

Note: MTOP-Q = MTMC Operations — Quality.

Table C-6.

Resource Requirements for Technical EDI Activities

Activity	Frequency per year	Resource hours per work unit	Annual resource hours[a]
Standards/implementation conventions management			
Initiate change requests	75	4.0	300
Attend work group meetings	12	16.0	192
Attend ANSI ASC X12 meetings	4	80.0	320
Hardware requirements processing	2[b]	24.0	48
Software requirements processing			
Acquire translation software	2[b]	16.0	32
Develop application interface	3[c]	92.0	276
Resolve problems	50	10.0	500
Communications requirements processing			
Install application communications	2[b]	40.0	80
Coordinate VAN procurement requirements	0.33[d]	160.0	53
Resolve problems	50	10.0	500
System testing	30[e]	64.0[f]	1,920
User training	2[b]	136.0	272
Carrier technical certification	136[g]	32.0 (see Table C-7)	4,352
Systems operations	9[h]	300.0	2,700
Technical support			
Hot line	1,000	0.5	500
System recovery	27[i]	1.0	27
System troubleshooting	45[j]	12.0	540

Note: ANSI = American National Standards Institute; ASC = Accredited Standards Committee; VAN = value-added network.

Footnotes for Table C-6

ª Total annual resource hours equals frequency per year multiplied by resource hours per work unit.

ᵇ Frequency of processing hardware requirements, acquiring translation software, installing applications communications, and training EDI users assume that MTMC will develop or reengineer two EDI applications each year.

ᶜ Frequency of developing application interface based on expected number of transaction sets. The following transaction sets affecting ocean application systems, including ACI, AANI, IBS, and WPS, are expected to require implementation conventions and interface mapping effort between FY94 and FY96: 300, 301, 303, 304/858, 309, 312, 315, 350. Transaction set requirements for WPS are yet to be determined, but we assume two additional transaction sets. The average number of transaction sets per year is three.

ᵈ A communications EDI VAN procurement is expected every 3 years.

ᵉ A test requirement exists for each Military Service/Defense agency translation software site requiring interface with a MTMC translation software site. Frequency of system testing assumes 27 DoD system interface test requirements (82 interfaces divided by 3 years) plus 3 carrier system interface test requirements per year. Carrier system testing is required to test MTMC systems, not to certify carrier EDI operations.

ᶠ Estimated resource hours per work unit for system testing is equal to resource hours estimated for carrier EDI certification activities.

ᵍ Frequency of carrier EDI technical certification is based on the estimated annual number of carriers requiring EDI certification by the end of FY96.

ʰ Frequency of EDI systems operations based on the number of MTMC EDI operations sites. By the end of FY96, the CFM system and WHIST will operate from one site each, IBS will replace ACI and absorb AANI and is planned to be operating from two sites, and WPS will be operating from five sites.

ⁱ Frequency of system recovery is based on the number of EDI application sites multiplied by an estimated three system recoveries per site.

ʲ Frequency of system troubleshooting is based on the number of EDI application sites multiplied by an estimated five problems per application per year.

Table C-7.
Carrier EDI Technical Certification — Resource Hours Analysis

Activity	Resource hours per event
Interface with carrier via phone	3.0
Send convention/other material	0.5
Establish telecommunications	4.0
Set up trading partner profile	4.0
Evaluate "bench mark" test cases for communications and translation	20.0
Send certification message carrier and MTOP-Q	0.5
Total	32.0

Table C-8.
Resource Requirements for Management/Administrative EDI Activities

Activity	Frequency per year	Resource hours per work unit	Annual resource hours[a]
Strategic planning	1	160	160
Program development resourcing	NA[b]	NA[b]	40
Program coordination[c]	NA[b]	NA[b]	1,500
Education	1	100	100
TPA development	1	160	160
Industry promotion	2	120	240
Performance monitoring	5[d]	50	250

[a] Total annual resource hours equals frequency per year multiplied by resource hours per work unit.

[b] Estimated program resourcing and coordination activities resource hours are averaged over the year – frequency and resource hours per work unit are not applicable (NA).

[c] Program coordination includes such activities as attending community work groups, coordinating translation software and communications issues within MTMC, coordinating EDI regulation requirements within MTMC, coordinating EDI VAN procurement requirements within MTMC, and overseeing EDI functional and technical processes.

[d] EDI performance monitoring frequency per year is based on the number of EDI applications in operation. EDI applications developed by MTMC and planned for operation by the end of FY96 include CFM, WHIST, IBS, WPS, and TC ACCIS.

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13. ABSTRACT (Maximum 200 words)

The Military Traffic Management Command has made several significant investments in electronic data interchange (EDI). By the end of FY96, it will have developed seven EDI applications involving more than 900 EDI trading partners and 15 public standards. To manage such a massive program, MTMC needs a "corporate direction." We recommend that MTMC establish an EDI Coordination Office, reporting to the Deputy Chief of Staff for Information Management and form a permanent EDI Coordination Committee consisting of representatives of all MTMC components with EDI interests. Many private-sector companies that are successfully using EDI have adopted similar approaches.

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